LAW OFFICES
KOTEEN & NAFTALIN
1150 CONNECTICUT AVENUE
WASHINGTON, D.C. 20036

BERNARD KOTEEN
ALAN Y. NAFTALIN
RAINER K. KRAUS
ARTHUR B. GOODKIND
GEORGE Y. WHEELER
HERBERT D. MILLER, JR.
MARGOT SMILEY HUMPHREY
PETER M. CONNOLLY
CHARLES R. NAFTALIN

M. ANNE SWANSON
GREGORY C. STAPLE
OF COUNSEL

TELEPHONE
(202) 467-5700
TELECOPY
(202) 467-5915
CABLE ADDRESS
"KOBURT"

ORIGINAL
FILE

August 7, 1992

Ms. Donna Searcy
Secretary of Federal
Communications Commission
1919 M Street, NW
Washington, D.C. 20054

RE: Petition for Rulemaking of North American Teletrac and Location Technology, Inc. RM No. 8013

Dear Ms. Searcy:

Transmitted herewith on behalf of Mark IV IVHS Division are an original and nine copies of its reply comments in the above-captioned proceeding.

In the event that there are any questions concerning this matter, please communicate with the undersigned.

Very truly yours,

George Y. Wheeler

ORIGINAL

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Petition for Rulemaking of	)	
	)	
North American Teletrac and Location Technology, Inc.	)	RM No. 8013
	)	
Amendment of Section 90.239 of the Commission's Rules to Adopt Permanent Regulations for Automatic Vehicle Monitoring Systems	)	

TO: The Commission

REPLY COMMENTS OF MARK IV IVHS DIVISION

Mark IV IVHS Division ("Mark IV"), by its attorneys, submits its reply comments in the above-captioned proceeding regarding a proposed amendment of Section 90.239 of the Commission's rules to adopt permanent regulations for Automatic Vehicle Monitoring Systems.

The Commission has received comments opposing grant of the Petition filed by North American Teletrac and Location Technologies, Inc. ("Teletrac") from numerous parties, including developers of competitive AVM technologies, manufacturers of AVM devices, AVM system integrators and operators, and a broad range of users of AVM services and facilities including truckers, railroads, container ship/vessel operators, port terminal facilities

operators, expressway authorities, turnpike authorities and airport authorities. We agree with the broad consensus reflected in these comments that grant of exclusive use of the available 902-928 MHz spectrum proposed by Teletrac would foreclose healthy development of robust AVM technologies such as that developed by Mark IV, would severely limit competitive entry for new companies proposing to provide innovative AVM services and features and would block the natural expansion of the existing AVM operations of Mark IV and others on the frequencies for which Teletrac has requested exclusive licensing.

The Commission should dismiss or deny the above-captioned Petition. The Commission should adopt instead a Notice of Inquiry to develop permanent regulations which promote development of robust and reliable AVM technologies in the 902-928 MHz band, open competitive entry based on shared use of this band, and flexible technical rules to permit the rapid introduction of AVM technologies to meet emerging intelligent vehicle-highway system needs.

DISCUSSION

1. The Mark IV has Developed Robust, Spectrum Efficient and Versatile AVM Technologies which are currently in use to provide valuable AVM functions.

Mark IV systems are designed to operate in conformance with existing Commission rules pertaining to AVM services in the 902-928 MHz band. The company has always been aware that expanding uses of an AVM systems would mean widespread deployment of both

transponders and readers. It therefore sought to make the most efficient use of the RF spectrum possible given the requirements of data rate and triggering sensitivity. Its early experiments showed that very short triggering pulses and very fast data transmissions achieved the desired results, caused minimal interference to other services in this spectrum band and were electronically robust. This resulted in Mark IV system designs incorporating very low average power, spectrum spreading from use of short high speed pulses and minimal transmission path length operations.

The Mark IV system is a semi-active microwave, short range two-way communication technology consisting of three basic components: a vehicle mounted transponder, an antenna, and a roadside reader. The method of operation is straightforward - the transponder, a Part 15 device, transmits its identification and other stored data to the antenna in response to a 910 MHz trigger pulse from the roadside reader, a Part 90 device. The antenna relays this information to the roadside reader which can store it and/or send it to a central computer. The roadside reader can in turn transmit reprogramming data to the transponder. Transponders can be mounted on the undersides of vehicles, elsewhere on the vehicle exterior, or inside of windshields. Up to eight lanes of traffic can be monitored at highway speeds from a single roadside reader through multiplexed antennas. The Mark IV system is highly reliable and accurate. Linked with other

technologies the Mark IV system can be employed in a very wide variety of AVM applications such as electronic toll collection, parking revenue control and motor carrier regulation enforcement.

2. The Commission's current policies regarding Part 90 licensing of 902-928 MHz spectrum for AVM use on a shared use basis should be retained when permanent AVM rules are adopted.

Mark IV systems operate under Part 90 licensing on shared frequencies in the 902-928 MHz band on a non-interference basis with wide variety of other mobile communication devices which are increasingly using this band. Such other devices include Part 90 licensed operations of other systems, high power ISM, Government frequency uses, Amateur services and operations of Part 15 devices. Mark IV systems have been stringently tested by independent consultants and FCC approved test facilities to confirm their non-interfering characteristics. Testing also included the evaluation of the effects of the Mark IV systems on cellular phones, mobile radios, pagers, and car radios when these were operated in close proximity to its AVM antennas. In all of these tests, no harmful interference cases were found in which any Mark IV system either disrupted or impaired the operations of other devices or received interference from any of these devices which disrupted or impaired its own operations.

The concerns expressed by Mobilevision regarding potential interference to its own AVM system (Comments, Attachment A)

appear to relate exclusively to interference received from "narrowband" AVM systems. Mark IV's wideband carrier, to its knowledge, has never caused harmful interference to any collocated wideband AVM "location" system.[1] Nor on the basis of Mark IV's engineering research is there any reasonable likelihood such interference ever would be caused considering the unique design of the Mark IV system.

Mark IV and others have established operations in the 902-928 MHz band under Part 90 licensing which specifically provides for shared use of these frequencies and designed their systems accordingly. Mark IV has made very substantial commitments of capital and has customers who rely upon the continued availability of the AVM capabilities which it provides. The fact that Teletrac's technology design may not have met its own original expectations in terms of reliable operation in a shared frequency environment is not an appropriate basis for cutting off the rights of Mark IV and other companies, and their customers, to access these frequencies.

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[1]. In the discussions which have taken place between Mark IV and Teletrac engineering personnel, Teletrac personnel have never raised concerns about harmful interference to its AVM system caused by operation of Mark IV systems in the vicinity.

3. The Commission should adopt permanent rules for AVM systems in the 902-928 MHz band which retain a broad definition of permissible AVM functions, assure open competitive entry and promote advances in AVM communications technologies.

Both the Intermodal Surface Transportation Efficiency Act of 1991 and the Intelligent Vehicle-Highway System Act of 1991 serve as benchmarks of public policy concerning the crucial need for the development of new technology solutions to our existing transportation problems. In particular the latter act established, among others, the following goals:

> "the widespread implementation of intelligent vehicle-highway systems to enhance the capacity, efficiency and safety of the Federal-aid highway system...;
>
> the development and promotion of intelligent-vehicle systems and an intelligent vehicle-highway systems industry in the United States...; (and)
>
> the development of a technology base for intelligent vehicle-highway systems and the capacity to perform demonstration experiments..."

Implementation of IVHS will greatly improve the ability of the surface transportation system of the United States to move people and goods thereby benefitting the public at large.

Numerous state, regional and local governmental authorities are either in the process of implementing or planning the near term installation of intelligent vehicle-highway systems including:

Advanced Traffic Management Systems,

Advanced Traveler Information Systems,

Advanced Vehicle Control Systems,
Advanced Public Transportation Systems, and
Commercial Vehicle Operations.

These authorities have already initiated steps toward competitive procurement of AVM systems to enable them to find cost beneficial solutions to their transportation problems. We strongly urge the Commission to consider initiating Notice of Inquiry proceedings to adopt permanent rules which preserve opportunities for a genuinely competitive AVM marketplace and for the rapid introduction of advanced AVM systems and capabilities to meet the important needs of these authorities.

Mark IV has developed AVM products which provide an economical and highly versatile technological approach to the achievement of the performance criteria sought by the foregoing public and private sector agencies. This has been possible in part because the Commission's interim AVM rules provided a flexible regulatory structure under which AVM products which were unheard of just a few years ago could be rapidly developed and deployed. Technology advances have not been impeded by overly restrictive technical standards. Spectrum in the 902-928 MHz band has been accessible under Part 90 licensing to permit multiple providers to implement diverse and competitive AVM systems. In short, the Commission's flexible regulation of AVM systems has made possible the rapid expansion of AVM capabilities in direct response to pressing national needs to solve transportation related problems.

The accelerating pace of anticipated AVM system deployment, particularly for the five main functional applications for intelligent vehicle-highway systems described above, underscores the need for continued flexibility in any permanent AVM rules which the Commission may consider. Adoption of a broad definition of permissible AVM functions will permit a diverse family of AVM systems to be deployed rapidly as contemplated under the statutes quoted above. Open entry to 902-928 MHz spectrum under Part 90 licensing is essential to assure the benefits of genuine competition among multiple AVM providers.[2] The Commission's technical rules should provide spectrum for diverse wideband and narrowband AVM technologies to assure that technology advances are developed and implemented in rapid response to market needs.

CONCLUSION

The development of AVM systems, particularly intelligent vehicle-highway systems, will be an important new ingredient in

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[2]. We oppose the expansion of AVM service definitions at this time to include services related to the tracking of people and "things not mobile," as proposed by Teletrac. As described above, the public safety, governmental, industrial and transportation uses of AVM systems are rapidly proliferating. If the Commission is prepared to consider the expanded uses proposed by Teletrac at all, it should do so only after the AVM industry has had a suitable opportunity to develop and deploy intelligent vehicle-highway systems for eligible users as defined in existing rules.

the mix of advanced telecommunications services to be introduced in coming years. In order to achieve the full range of benefits which such systems can provide, the Commission should make permanent its rules and policies which foster the expansion of AVM features, the opportunity for choice among genuinely competitive multiple providers of AVM systems and the rapid advance of AVM technology innovation. The Commission should dismiss or deny the Petition for Rulemaking of Teletrac as plainly contrary to these important regulatory objectives.

Respectfully submitted,

MARK IV IVHS DIVISION

s/ George Y. Wheeler
George Y. Wheeler

Koteen & Naftalin
1150 Connecticut Avenue, N. W.
Suite 1000
Washington, D. C. 20036
(202) 467-5700

August 7, 1992

Its Counsel

CERTIFICATE OF SERVICE

I, Abbie Weiner, a secretary in the law firm of Koteen & Naftalin, do hereby certify that a copy of the foregoing "Reply Comments of Mark IV IVHS Division" was sent by first class U.S. mail, postage prepaid, on this 7th day of August, 1992 to the offices of the following:

Richard C. Steinmetz
Assistant General Counsel
Allen-Bradley Company, Inc.,
1201 South Second Street
Milwaukee, WI 53204

James S. Marston
Senior Vice President
and Vice President and
Chief Information Officer
American President Companies, Ltd.
1111 Broadway
Oakland, CA 94607

Ken Siegel
Associate General Counsel
American Trucking Association
2200 Mill Road
Alexandria, VA 22314

Richard E. Wiley
David E. Hilliard
Carl R. Frank
Edward A. Yorkgitis, Jr.
Michael A. Lewis, Technical Consultant of
Wiley, Rein & Fielding
1776 K Street, N.W.
Washington, D.C. 20006
Counsel for AMTECH Corporation

Richard F. Andino
Vice President
Amtech Logistics Corporation
17304 Preston Road, E100
Dallas, TX 75252

Thomas J. Keller
Verner, Liipfert, Bernhard, McPherson
and Hand, Chartered
901 15th Street, N.W.
Suite 700
Washington, D.C. 20005
Counsel for Association of American Railroads

C.A. Moore
Executive Director
City of Los Angeles Department of Airports
P.O. Box 92216
Los Angeles, CA 90009-2215

David M. LeVan
Senior Vice President
Corporate Systems
Consolidated Rail Corporation
Six Penn Center Plaza
Philadelphia, PA 19103-2959

Hunter O. Wagner, Jr.
General Manager
Greater New Orleans Expressway Commission
P.O. Box 7656
Metairie, LA 70010

Stanley M. Gorinson, Esq.
Lyndee Wells, Esq.
Winthrop, Stimson, Putnam & Roberts
1133 Connecticut Avenue, N.W.
Washington, D.C. 20036
Counsel for Location Services

John J. McDonnell
Marnie K. Sarver
Matthew J. Harthun
Reed Smith Shaw & McClay
1200 18th Street, N.W.
Washington, D.C. 20036
Counsel for Mobilevision

Alfred Winchell Whittaker
Mitchell F. Hertz
James W. Draughn, Jr.
Kirkland & Ellis
655 15th Street, N.W.
Washington, D.C. 20009
Counsel for Mobilevision

Stanley M. Gorinson
Lyndee Wells
Winthrop, Stimson, Putnam & Roberts
1133 Connecticut Avenue, N.W.
Washington, D.C. 20036
Counsel for North American Teletrac & Location Technologies, Inc.

Richard L. Ridings
Chief Executive Officer
Oklahoma Turnpike Authority
3500 Martin Luther King Avenue
P.O. Box 11357
Oklahoma City, OK 73136-0357

John L. Bartlett
David E. Hilliard
Carl R. Frank
Edward A. Yorkgitis, Jr.
Wiley, Rein & Fielding
1776 K Street, N.W.
Washington, D.C. 20006
Counsel for Pinpoint Communications, Inc.

James D. Ellis
William J. Free
Mark P. Royer
Southwestern Bell Corporation
One Bell Center, Room 3524
St. Louis, Missouri 63101-3099

/s/ Abbie Weiner
Abbie Weiener